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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/614,978 | 07/12/2000 | Ye-Mon Chen | TH1781 (US) | 2462 |

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| EXAMINER | |
|---|---|
| DOROSHENK, ALEXA A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1764 | |

DATE MAILED: 12/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/614,978 | CHEN, YE-MON | |
| | Examiner | Art Unit | |
| | Alexa A. Doroshenk AAD | 1764 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892) 03/04/2002 AND 12/26/2000

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s).

4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: Page 1, line 14, should be updated to reflect that continuation-in-part of application serial no. 09/253,859 is now US Patent No. 6,228,328.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Castagnos, Jr. et al (4,060,395) and Luckenbach (3,494,858).

With regard to claims 1, 2, 21, and 22 Castagnos, Jr. et al. discloses the regeneration portion of an apparatus for a fluidized catalytic cracking unit (col. 1, lines 5-9) comprising:

a regenerator (100), a catalyst withdrawal well (114) spaced from said regenerator (100); a downwardly inclined standpipe (113) having its upper end fluidly connected to said regenerator (100), and its lower end fluidly connected to said catalyst withdrawal well (114) (col. 4, lines 13-20); a standpipe (116) for receiving catalyst from

said catalyst withdrawal well (col. 4, lines 26-32), said standpipe having an open end fluidly connected into said catalyst withdrawal well (col. 4, lines 26-27).

Though Castagnos, Jr. et al. does not recite element 114 specifically as a "catalyst withdrawal well", the entire standpipe portion (114) reads on a "catalyst withdrawal well". This is evidenced by Luckenbach. Luckenbach provides the following description of a withdrawal well in an FCC apparatus:

> "Catalyst from the regenerator fluid bed 75 overflows into the upper portion 78 of standpipe 77, which has a larger diameter than the lower portion thereof to serve as a withdrawal well and provide surge capacity to accommodate small fluctuations in the rate at which the catalyst overflows." (col. 5, lines 65-70)

In Castagnos, Jr. et al., there is an upper portion (115) of the standpipe (114) which has a larger diameter than the lower portion (116) thereof (col. 4, lines 20-25)), since the structural formation is the same as that of Luckenbach, it is held that the standpipe (114) of Castagnos, Jr. et al. is a "withdrawal well".

Castagnos, Jr. et al. fails to disclose a plurality of openings cut through the wall of said extended standpipe below said open upper end and above the floor of said catalyst withdrawal well.

Luckenbach teaches a standpipe (77) of a withdrawal well with vertical slots (79) provided below the open upper end to "give a smoother rate of catalyst withdrawal, and to permit slight variations in catalyst level without large fluctuations in the rate at which catalyst overflows into the withdrawal well" (col. 5, line 73- col. 6, line 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide vertical slots in the wall of the standpipe of Castagnos, Jr. et al. in order to

achieve the advantages of a smoother rate of catalyst withdrawal and to allow for variations in catalyst level, as taught by Luckenbach.

With regard to claims 3 and 23 Castagnos, Jr. et al. further includes means for injecting fluidizing gas (107 and 108) above said floor of said catalyst withdrawal well (the floor of the well is interpreted as where slide valve 117 can close off the withdrawal well).

With regard to claims 4, 7, 11, 14 and 18, as it has been discussed with respect to claim 1, above, that Castagnos, Jr. et al. discloses wherein a standpipe (114, 115, 116) is part of a withdrawal well of a fluid catalytic cracking unit.

With regard to claims 5, 8, 12, 15 and 19, Castagnos, Jr. et al. discloses that the catalyst flows from standpipe (116) "for contact with a hydrocarbon charge stock in a fluidized catalytic cracking reaction section (not shown)" (col. 4, lines 32-38), but fails to explicitly disclose that there is a stripper in this FCC unit.

Luckenbach teaches a FCC reaction section, such as that which is alluded to, but not shown by Castagnos, Jr. et al. In the teaching by Luckenbach, it is shown that the standpipe of the withdrawal well (77) is connected to a stripper (82) of the fluid catalytic cracking unit (col. 6, lines 3-26) and then the catalyst is contacted with hydrocarbon feed stock (66) as required, but not shown, by Castagnos, Jr. et al. Since Castagnos, Jr. et al. requires that catalyst from the standpipe contact with a hydrocarbon feed in an FCC reaction section, it would have been obvious to one of ordinary skill in the art at the time the invention was made to connect the standpipe of Castagnos, Jr. et al. as part of

a stripper for an FCC reaction, as it is merely a part of a conventional fluidized catalyst cracking section required by Castagnos, Jr. et al. and as taught by Luckenbach.

With regard to claims 6, 9, 13, 16 and 20, Castagnos, Jr. et al. discloses wherein the standpipe (114, 115, 116) is part of a regenerator (100) of a fluid catalytic cracking unit (col. 4, lines 10-24).

With regard to claims 10, 17, 24 and 25 Castagnos, Jr. et al. discloses wherein the means for injecting fluidizing gas includes at least one ring (col. 3, lines 25-32 and col. 3, lines 49-54) and it can be seen in the figure that at least one gas injection ring (108) is located at a level near the open upper end of the standpipe (116).

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 703-305-0074. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Please note, after December 10, 2003, the examiner can be reached at her new telephone number 571-272-1446 and the examiner's supervisor, Glenn Caldarola, can be reached at his new telephone number 571-272-1444.

Alexa Doroshenk
Patent Examiner
Art Unit 1764

November 25, 2003